Amendments to the Claims:

Please cancel claims 1-31 without prejudice or disclaimer of the subject matter contained therein.

32. (New) A Bacillus spore which is genetically modified with genetic code comprising at least one genetic construct encoding a therapeutically active compound and a targeting sequence or a vegetative cell protein for use in oral administration for therapeutic treatment.

33. (New) A spore as claimed in claim 32, wherein the therapeutically active compound is an antigen or a medicament or a precursor to an antigen or a medicament.

34. (New) A spore as claimed in claim 32, wherein the gene construct is a chimeric gene.

35. (New) A spore as claimed in claim 33, wherein the gene construct is a chimeric gene.

36. (New) A spore as claimed in claim 32, wherein the genetic modification is accomplished by transformation of a mother cell using a vector containing the gene construct and then inducing the mother cell to produce the spores.

37. (New) A spore as claimed in claim 32, wherein the gene construct is under the control of one or more of, each or independently, an inducible promoter, a promoter or a strong promoter or modified promoter.

38. (New) A spore as claimed in claim 37, wherein the gene construct is under the control of one or more of, each or independently, an inducible promoter, a promoter or a strong promoter or modified promoter.

39. (New) A spore as claimed in claim 37, wherein the gene construct has an enhancer element or an upstream activator sequence associated with it.

40. (New) A spore as claimed in claim 32, wherein the construct comprises an inducible expression system.

41. (New) A spore as claimed in claim 37, wherein the construct comprises an inducible expression system.

42. (New) A spore as claimed in claim 32, wherein the spore germinates in the duodenum and/or the jejunum of an intestinal tract of a human or animal body.

43. (New) A spore as claimed in claim 32, wherein the therapeutically active compound is an antigen which, in use, is adapted to elicit an immune response.

44. (New) A spore as claimed in claim 43, wherein the antigen is at least a fragment of tetanus toxin fragment C or labile toxin B sub unit.

45. (New) A spore as claimed in claim 37, wherein the protein is a protein that is expressed in the cell barrier.

46. (New) A spore as claimed in claim 45, wherein the protein is a protein that is expressed in the cell barrier.

47. (New) A spore as claimed in claim 37, wherein the protein is expressed all the time in a vegetative cell.

48. (New) A spore as claimed in claim 47, wherein the protein is expressed all the time in a vegetative cell.

49. (New) A spore as claimed in claim 47, wherein the protein is OppA or rrnO.

50. (New) A spore as claimed in claim 32, wherein the protein is expressed intermittently in a vegetative cell.

51. (New) A spore as claimed in claim 46, wherein the protein is expressed intermittently in a vegetative cell.

52. (New) A spore as claimed in claim 32, wherein the protein is a soluble cytoplasmic vegetative cell protein.

53. (New) A spore as claimed in claim 44, wherein the protein is a soluble cytoplasmic vegetative cell protein.

54. (New) A spore as claimed in claim 52, wherein the protein is rrnO.

55. (New) A spore as claimed in claim 52, wherein the genetic construct of the soluble cytoplasmic protein wholly or partially comprises a signal sequence.

56. (New) A spore as claimed in claim 54, wherein the genetic construct of the soluble cytoplasmic protein wholly or partially comprises a signal sequence.

57. (New) A spore as claimed in claim 32, wherein the signal sequence is adapted to target the therapeutically active compound to a specific part of the vegetative cell.

58. (New) A spore as claimed in claim 44, wherein the signal sequence is adapted to target the therapeutically active compound to a specific part of the vegetative cell.

59. (New) A spore as claimed in claim 57, wherein the signal sequence directs the therapeutically active compound for secretion (preferably active secretion, more preferably Type I, Type II or Type III secretion), or for post-translational processing by a vegetative cell (preferably glycosylation).

60. (New) A spore as claimed in claim 32, wherein the therapeutically active compound is an antigen precursor which is one or more enzymes capable of transforming a biological precursors, such that upon germination said one or more enzymes are expressed and synthesise one or more antigens by transformation of a said biological precursor.

61. (New) A spore as claimed in claim 59, wherein the therapeutically active compound is an antigen precursor which is one or more enzymes capable of transforming a biological precursors, such that upon germination said one or more enzymes are expressed and synthesise one or more antigens by transformation of a said biological precursor.

62. (New) A spore as claimed in claim 60, wherein the biological precursor is a hormone, a steroid hormone, a painkiller or a pro-drug.

63. (New) A spore as claimed in claim 32, wherein the therapeutically active compound is a medicament which is a protein, a vaccine or an endorphin.

64. (New) A spore as claimed in claim 59, wherein the therapeutically active compound is a medicament which is a protein, a vaccine or an endorphin.

65. (New) A spore as defined in claim 32, wherein it is for use in treatment of a medical condition, preferably the medical condition is inflammation, pain, a hormonal imbalance and/or an intestinal disorder.

66. (New) A spore as defined in claim 64, wherein it is for use in treatment of a medical condition, preferably the medical condition is inflammation, pain, a hormonal imbalance and/or an intestinal disorder.

67. (New) A composition comprising at least two different spores as defined in claim 32, wherien said at least two different spores express at least two different therapeutically active compounds.

68. (New) A composition as defined in claim 67, wherein the composition further comprises a pharmaceutically acceptable excipient or carrier.

69. (New) A composition comprising a spore as defined in claim 32 in association with a pharmaceutically acceptable excipient or carrier.

70. (New) A composition comprising a spore as defined in claim 65 in association with a pharmaceutically acceptable excipient or carrier.

71. (New) A composition as defined in claim 67 for use in treatment of a medical condition, preferably the medical condition is inflammation, pain, a hormonal imbalance and/or an intestinal disorder.

72. (New) A composition as defined in claim 68 for use in treatment of a medical condition, preferably the medical condition is inflammation, pain, a hormonal imbalance and/or an intestinal disorder.

73. (New) A composition as defined in claim 69 for use in treatment of a medical condition, preferably the medical condition is inflammation, pain, a hormonal imbalance and/or an intestinal disorder.

74. (New) Use of a spore as defined in claim 32 in the manufacture of a medicament for use in the treatment of a medical condition, preferably the medical condition is inflammation, pain, a hormonal imbalance and/or an intestinal disorder.

75. (New) A method of medical treatment, which method comprises the steps of

a) administering a spore as defined in claim 32 to a human or animal in need of medical treatment;

b) said spore germinating into a vegetative cell in the intestinal tract;

c) said vegetative cell expressing a therapeutically active compound for use in the medical treatment.

76. (New) A method of medical treatment, which method comprises the steps of

d) administering a spore as defined in claim 65 to a human or animal in need of medical treatment;

e) said spore germinating into a vegetative cell in the intestinal tract;

f) said vegetative cell expressing a therapeutically active compound for use in the medical treatment.

77. (New) A method as claimed in claim 75, wherein the spore is administered orally, intra-nasally or rectally.

78. (New) A method as claimed in claim 76, wherein the spore is administered orally, intra-nasally or rectally.